

## CLAIM AMENDMENTS

1           1. (previously presented) A method for controlling input/output (I/O) operations  
2 of a user's computer comprising the following steps:  
3           implementing the user's computer as a virtual machine (VM);  
4           including an interface software component between the VM and a physical  
5 computer system that includes at least one device;  
6           in the interface software component:  
7           sensing a request for an I/O operation between the VM and the device;  
8           performing a transformation of I/O data passing between the VM and the device,  
9 said transformation being adjunct to necessary completion of the request, as issued, for  
10 the I/O operation;  
11           the transformation of the I/O data thereby being undefeatable by any user action  
12 via the VM.

1           2. (previously presented) A method as in claim 1, in which:  
2           the device is a display;  
3           the I/O data is VM display data output from the VM and intended for display; and  
4           the transformation is a replacement of at least a portion of the VM display data  
5 with non-defeatable display data stored external to the VM;  
6           further including the step of displaying the VM display data with the non-  
7 defeatable display data overlaid.

1           3. (previously presented) A method as in claim 1, further including the following  
2 steps:  
3           filtering the I/O data with respect to at least one predetermined filtering condition;  
4 and  
5           performing the transformation of the I/O data only when the filtering condition is  
6 met.

1           4. (previously presented) A method as in claim 3, in which the filtering condition  
2 is that the I/O data includes at least one restricted term.

1           5. (previously presented) A method as in claim 3, in which the filtering condition  
2 is that the I/O data is from a restricted source.

1           6. (previously presented) A method as in claim 3, in which:  
2 the I/O data includes image data;  
3 the step of filtering the I/O data comprises detecting the presence of a  
4 representation of a target image within the image data; and  
5 the transformation is substitution of a representation of a replacement image in  
6 place of the representation of the target image.

1           7. (original) A method as in claim 6, in which:  
2 the I/O data is in a non-character image format;  
3 the target image is a representation of a restricted character string; and  
4 the step of filtering the I/O data comprises applying character recognition to the  
5 I/O data.

1           8. (previously presented) A method as in claim 3, in which the filtering condition  
2 is the presence in the I/O data of a copy protection indication.

1           9. (previously presented) A method as in claim 1, in which the transformation  
2 comprises insertion into the I/O data of a source indication associated with the VM.

1           10. (original) A method as in claim 1, in which the transformation is time-  
2 varying.

1           11. (original) A method as in claim 1, in which the device is a network  
2 connection device.

1           12. (previously presented) A method as in claim 11, in which the transformation  
2 is a bandwidth limiting of the I/O data being transferred between the VM and the  
3 network connection device.

1           13. (previously presented) A method as in claim 11, in which:  
2 the requested I/O operation is a transfer of the I/O data between the VM and the  
3 network connection device; and  
4 the transformation is a time delay of the transfer.

1           14. (previously presented) A method as in claim 11, in which:  
2 the requested I/O operation is a transfer of the I/O data from the VM to a first  
3 destination address via the network connection device;  
4 the transformation is a redirection of the I/O data to a second destination address  
5 different from the first.

1           15. (previously presented) A method as in claim 1, in which:  
2 the device is a display;  
3 the display renders data stored in a display map; and  
4 the step of performing the transformation comprises altering a selected portion of the  
5 display map.

1           16. (currently amended) A method as in claim 15, in which the step of altering  
2 the selected portion of the display data comprises substituting non-defeatable display  
3 data for the selected portion.

1           17. (previously presented) A method as in claim 15, in which the step of  
2 altering the selected portion of the display data comprises changing all occurrences in  
3 the display map of a display color to a replacement color.

1           18. (previously presented) A method as in claim 1, in which:  
2           the device is a data storage device;  
3           the requested I/O operation is a transfer of data between the VM and the storage  
4 device; and  
5           the step of performing the transformation comprises changing at least a portion  
6 of the data during the transfer between the VM and the storage device.

1           19. (previously presented) A method as in claim 18, in which the step of  
2 performing the transformation of the I/O data comprises encrypting data written by the  
3 VM to the data storage device and decrypting data read from the data storage device by  
4 the VM.

1           20. (previously presented) A method as in claim 18, in which the step of  
2 performing the transformation of the I/O data comprises compressing data written by the  
3 VM to the data storage device and decompressing data read from the data storage  
4 device by the VM.

1           21. (previously presented) A method as in claim 1, in which:  
2           the device is a network connection device;  
3           the requested I/O operation is a transfer of data between the VM and the network  
4 connection device; and  
5           the step of performing the transformation comprises changing at least a portion  
6 of the data during the transfer between the VM and the network connection device.

1           22. (previously presented) A method as in claim 21, in which the step of  
2 performing the transformation of the I/O data comprises encrypting data written by the  
3 VM to the network connection device and decrypting data read from the network  
4 connection device by the VM.

1           23. (previously presented) A method as in claim 21, in which the step of  
2 performing the transformation of the I/O data comprises compressing data written by the  
3 VM to the network connection device and decompressing data read from the network  
4 connection device by the VM.

1           24. (previously presented) A method as in claim 1, in which the step of  
2 performing the transformation of the I/O data comprises cryptographic transformation of  
3 the I/O data.

1           25. (previously presented) A method as in claim 3, in which:  
2 the VM supports a plurality of I/O modes;  
3 the step of filtering is performed on I/O data corresponding to a first one of the  
4 plurality of I/O modes; and  
5 the predetermined transformation is applied to I/O data in a second one of the I/O  
6 modes when the I/O data in the first I/O mode satisfies a transformation-triggering  
7 criterion.

1           26. (original) A method as in claim 25, in which the I/O modes include a video  
2 mode and an audio mode.

1           27. (currently amended) A method for controlling input/output (I/O) of a user's  
2 computer comprising the following steps:  
3           implementing the user's computer as a virtual machine (VM);  
4           including an interface software component between the VM and a physical  
5 computer system that includes at least one device that carries out an VM-requested I/O  
6 operation on the basis of device control data;  
7           storing the device control data associated with the VM in a buffer;  
8           upon sensing a transformation command from an administrative system external  
9 to the VM, entering replacement data into at least a portion of the buffer, said  
10 replacement data being entered as a processing step that is adjunct to the necessary  
11 completion of the I/O operation as requested by the VM;  
12           the entry of the replacement data thereby being undefeatable by any action  
13 initiated via the VM.

1           28. (previously presented) A system for controlling input/output (I/O) operations  
2 of a user's computer, comprising:  
3           a virtual machine (VM) constituting the user's computer;  
4           an interface software component between the VM and a physical computer  
5 system that includes at least one device;  
6           the interface software component including computer-executable code:  
7               for sensing a request for an I/O operation between the VM and the device;  
8 and  
9               for performing a transformation of I/O data passing between the VM and  
10 the device, said transformation being adjunct to necessary completion of the request, as  
11 issued, for the I/O operation;  
12           the transformation of the I/O data thereby being undefeatable by any action via  
13 the VM.

1           29. (original) A system as in claim 28, in which the device is a display and the  
2 I/O data is VM display data.

1           30. (previously presented) A system as in claim 29, further comprising:  
2           a display buffer for storing the VM display data that is output from the VM and is  
3 intended for display; and  
4           a transformation software module comprising computer-executable code within  
5 the interface software component for replacing at least a portion of the VM display data  
6 stored in the display buffer with non-defeatable display data;  
7           in which the display is provided for displaying the contents of the display buffer.

1           31. (original) A system as in claim 28, in which the device is a data storage  
2 device.

1           32. (original) A system as in claim 28, in which the device is a network  
2 connection device.